

MODEL 9250

40Vp-p Differential / Dual Channel Signal Amplifier



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- Large signal bandwidth to 15MHz
- Small signal bandwidth to 30MHz
- High amplitude to 40Vp-p (into high impedance)
- Slew rate to 500V/μs
- Low distortion
- Custom Configuration of:
 - Gain
 - Input impedance
 - Output impedance
 - Output configuration

The 9250 is a bench-top, 2U, half 19" rack size, fully metal case dual channel amplifier. The instrument can be configured to be used as two, single-ended independent channels, or as a one input with two differential outputs.

Input Characteristics

The inputs to the amplifiers can be configured to match different source impedances such as 50Ω, 75Ω, or 1MΩ and the outputs can be configured to match different load impedances such as 50Ω, 75Ω, or 600Ω.

There are three inputs for each channel:

1. Main input. This input is located on the front panel and is normally used for signal inputs.
2. Auxiliary input. This input is located on the rear panel and can be used as a summing input.
3. DC Offset input. This input is also located on the rear panel and can be used for offsetting the signal level within the specified output level window.

Output Characteristics

The outputs are located on the front panel. There are two outputs, one for each channel. When the 9250 is configured as two separate amplifiers, the outputs generate amplified signals within the range of 40Vp-p into open circuit or 20Vp-p into matching load impedance. The bandwidth of the outputs is around 15MHz for large signals. Small signal bandwidth can reach 30MHz.

Instrument Configuration

The 9250 can be configured as a differential amplifier. In this case, the channel 2 input is disabled and channel 1 input is amplified and distributed differentially to both outputs. In this case, channel 1 output generates in-phase signal while channel 2 outputs an inverted signal that has exactly 180 phase offset to the normal output. Full amplitude and bandwidth is preserved when the 9250 operates in differential mode. The output impedance of the differential outputs is modified to 25Ω, 37.5Ω, or 300Ω for differential drive of 50Ω, 75Ω, or 600Ω loads. Using the differential mode, the 9250 does not sacrifice accuracy, nor does it sacrifice bandwidth.

Auxiliaries

The 9250 has two additional inputs for each channel allowing summation of two signals and providing an external control of DC level offset. These inputs are accessible from the rear panel only.

Target Applications

The amplifier case was designed to stack on top or below other Tabor products. It can also be mounted alongside a Tabor generator in a standard 19" rack. The waveform-amplifier combo is an ideal solution for virtually any high-voltage, wide bandwidth application.

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Specification

CONFIGURATION

Channels: 2 with single-ended outputs;
1 with differential outputs

INPUT CHARACTERISTICS

Connector: Front panel BNCs
Impedance: 50 Ω , 75 Ω or 1M Ω
Coupling: DC or AC
Damage Level: 12Vp-p (-6V to +6V peaks)
Frequency Range:
DC to 15MHz DC coupled, 50 Ω
40kHz to 15MHz AC coupled, 50 Ω /75 Ω
20Hz to 15MHz AC coupled, 1M Ω

OUTPUT CHARACTERISTICS

GENERAL

Connector: Front panel BNC
Impedance:
Single-Ended 50 Ω , 75 Ω , or 600 Ω
Differential 600 Ω
Coupling: DC or AC
Protection: Short-circuit, 10 seconds
Gain: x10⁽²⁾, fixed
Polarity: Normal
Amplitude: 0 to 20Vp-p into matching
impedance
0 to 40Vp-p into high
impedance

Max. Output Current: 200mA into 50 Ω

SQUARE WAVE CHARACTERISTICS

Transition Time: <22ns
Aberrations: <7%

SINE WAVE CHARACTERISTICS

Bandwidth: -3dB
Small Signal 30MHz, at 2Vp-p
Large Signal 15MHz, at 20Vp-p
Accuracy: \pm (3% of full-scale amplitude
range + 25mV), Square wave
at 1KHz

Flatness (10Vp-p):

DC to 1MHz 5%
1MHz to 15MHz 10%

THD: 0.1%, 10Hz to 100kHz

Harmonics (10Vp-p):

100kHz to 5MHz <-50dBc
5MHz to 15MHz <-40dBc

GENERAL

Voltage Range: 85VAC to 265VAC
Frequency Range: 47Hz to 63Hz
Power Consumption: 25W
Signal Ground: Grounded to case ground
Dimensions:
With Feet 315 x 102 x 395 mm (WxHxD)
Without Feet 315 x 88 x 395 mm (WxHxD)
Weight:
Without Package 3.5kg
Shipping Weight 4kg
Temperature:
Operating 0 $^{\circ}$ C to 50 $^{\circ}$ C
Storage -40 $^{\circ}$ C to 70 $^{\circ}$ C
Humidity: 80% RH, non condensing
Safety: CE Marked, IEC61010-1
Calibration: 1 year
Warranty ⁽¹⁾: 3 years standard

ORDERING INFORMATION

40Vp-p Differential / Dual-Channel Signal Amplifier

MODEL 9250-10-50-50-D-S⁽¹⁾

Gain: 10, 15 or 20, fixed⁽²⁾

Input Impedance: 50 = 50 Ω

75 = 75 Ω

1M = 1M Ω

Output Impedance: 50 = 50 Ω

75 = 75 Ω

600 = 600 Ω

Coupling: D = DC

A = AC

Output

Configuration: S = Two separated channels

D = Single channel with
differential outputs⁽³⁾

⁽¹⁾ Standard Configuration

⁽²⁾ Custom gain from x10 to x20 can be ordered
however, bandwidth may change.

⁽³⁾ Output impedance for differential drive is 600 Ω
only.

⁽⁴⁾ Specification is given for the standard
configuration only

⁽¹⁾ Standard warranty in India is 1 year.